

**USDA Service Center Agencies  
Geospatial Data Management Team  
Data Management Plan For**

**Map Indexes**

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**I. Purpose and Scope (business case)**

**A. Purpose**

The U.S. Geological Survey (USGS) produces maps at various scales. These maps are mostly produced in a regular grid. The names and identifiers of the maps have become a standard reference for a unique piece of geography. Indexes to these maps are then often used as location reference and orientation when viewing, referring to or searching for maps. Several of the index maps are viewable at [The National Atlas](#) in the map reference section.

One index is the 1:12,000 digital aerial photographs, known as [Digital Orthophoto Quadrangles](#) (DOQ), which cover 3.75 minutes of latitude by 3.75 minutes of longitude. Four DOQs can be combined to cover the area represented by a standard USGS 7.5-minute, 1:24,000-scale topographic map. The Index to Digital Aerial Photographs map layer shows the positions of the DOQs available for the United States, Puerto Rico, and the U.S. Virgin Islands.

The remaining indexes are for topographic maps the USGS produces at a variety of scales. The most detailed USGS topographic maps for the United States are at 1:24,000 or 1:25,000 scale, and the most detailed maps of Puerto Rico are at 1:20,000. The standard map size is 7.5 minutes of latitude by 7.5 minutes of longitude. The 1:25,000 scale maps are 7.5 minutes of latitude by 15 minutes of longitude. The Index to Topographic Maps - 1:24,000 and Other Large Scales map layer shows the positions of the more than 54,000 large-scale topographic maps that cover the United States, Puerto Rico, and the U.S. Virgin Islands. A set of topographic maps at 1:63,360 scale is produced for Alaska only.

The intermediate-scale USGS topographic maps are at 1:100,000 scale and are used for land management and planning. The standard map size is 30 minutes of latitude by 60 minutes of longitude. The Index to Topographic Maps - 1:100,000 Scale map layer shows the positions of the intermediate-scale topographic maps that cover the conterminous United States and Hawaii.

Similarly, the small-scale USGS topographic maps are at 1:250,000 scale and are used for regional planning. The standard map size is one degree of latitude by two degrees of longitude. The Index to Topographic Maps - 1:250,000 Scale map layer shows the positions of the intermediate-scale topographic maps that cover the conterminous United States, Alaska and Hawaii.

3.75 minute ortho quarter quads:	United States, Puerto Rico, and the U.S. Virgin Islands
7.5-minute map series:	Conterminous United States, Hawaii, and territories at 1:24,000 or 1:25,000 scale; Puerto Rico at 1:20,000 scale.
15-minute map series:	Alaska at 1:63,360 scale.
30- by 60-minute map series:	Conterminous United States and Hawaii at 1:100,000 scale.
1- by 2-degree map series:	United States at 1:250,000 scale.

Status graphics with quad names are available at: [USGS Status Graphics](#). Detailed information about topographic maps can be found on the USGS [Topographic Maps](#) page, and the USGS [Digital Backyard](#) has further information on topographic maps and digital cartographic products. Descriptive information includes the map name and a link to the [Terraserver](#), where the DRG and DOQ maps can be viewed.

## **B. Scope**

The scope of the map index dataset includes the United States and its territories.

# **II. Acquisition**

## **A. Data Source**

### **1. Producer Information**

#### **a. Name**

US Geological Survey

#### **b. Location of Headquarters**

US Geological Survey  
523 National Center  
Reston, VA 20192

#### **c. Internet Address**

[www.usgs.gov](http://www.usgs.gov)

### **2. Publisher Information**

#### **a. Name**

US Geological Survey

#### **b. Location of Headquarters**

U.S. Geological Survey  
EROS Data Center  
47914 252nd Street  
Sioux Falls, SD 57198-0001

c. Internet Address

[www.usgs.gov](http://www.usgs.gov)

### 3. Acquisition Information

a. Delivery Media

Index maps are no longer available from USGS. A few private companies offer a few of the index maps such as the 1:24,000 index.

Descriptive databases from which a map can be constructed is available via ftp.

A constantly updated descriptive database is available via email.

b. Download URL

<ftp://edcftp.cr.usgs.gov/pub/metadata/>

email for updated DOQ and DRG status lists

Lister B. Florence Jr. (LB)  
IMS Section - RTA  
1400 Independence Road - MS 706  
Rolla, MO 65401-2602  
573-308-3915  
[lflore@usgs.gov](mailto:lflore@usgs.gov)

The official name for each U.S. Geological Survey cell (map series) is contained in the Geographic Cell Names Data Base (GCNDB). This is also known as USGS Topographic Map Names Data Base. The USGS Topographic Map Names Data Base contains five separate files; one for each topographic map series. They include the 7.5- by 7.5-minute series, the 15- by 15-minute series, the 30- by 30-minute series (out of print), the 30-minute by 1-degree series, and the 1-degree by 2-degrees series. Information is located at:

[http://geonames.usgs.gov/gnis\\_users\\_guide\\_descripddb.html](http://geonames.usgs.gov/gnis_users_guide_descripddb.html) - USGSTMNDB

c. Projected Data Availability Schedule

Currently available.

## **B. Standards Information**

### 1. Geospatial Data Standard

a. Standard Name and Steward Information

Indexes and databases are not published to any standard

b. Standard Version

None

- c. Standard URL

None

## 2. Metadata Standard

- a. Standard Name and Steward Information

None

- b. Description of Metadata Captured

None

- c. Metadata Accuracy and Completeness Assessment

Metadata is non-existent

## **C. Acquired Data Structure**

### 1. Geospatial Data Format

- a. Format (raster, vector, etc.)

comma separated fields from which rectangles can be constructed

- b. Format Name

CSV – comma separated values

- c. Data Extent

The US and its territories

- d. Horizontal and Vertical Resolution

The indexes are generated grids so the resolution is absolute.

- e. Absolute Horizontal and Vertical Accuracy

The indexes are generated grids so the accuracy is absolute.

- f. Nominal Scale

1:12,000 to 1:250,000 depending on the index

- g. Horizontal and Vertical Datum

The datum is North American Datum 1983 for all appropriate areas (UTM zone 3 through 22) and World Geodetic System 1984 elsewhere. The vertical datum is mean sea level.

- h. Projection

Longitude/Latitude

- i. Coordinate Units

Degrees

j. Average Data Set Size

Varies significantly based on type of index. The largest index, which is DOQQ, is around 10 megabytes (as a compressed CSV).

k. Symbology

None

## 2. Attribute Data Format

a. Format Name

CSV – comma separated values

b. Database Size

Varies significantly based on type of index. The largest index, which is DOQQ, is around 10 megabytes (as a compressed CSV).

## 3. Data Model

a. Geospatial Data Structure

CSV – comma separated values

b. Attribute Data Structure

CSV – comma separated values

c. Database Table Definition

Single rows, one per quad index

d. Data Relationship Definition

None

e. Data Dictionary

Downloads for DRGs from <http://edcftp.cr.usgs.gov/pub/metadata/> contain:

```
Map Name|State|Overlay|Scale|NW Latitude|NW Longitude|NE
Latitude|NE Longitude|SE Latitude|SE Longitude|SW Latitude|SW
Longitude|Center Latitude|Center Longitude|Data Format|Product
Group|Level|Standards Version|ODB Version Nbr|Status Type|
Create Date|Source Date|Coordinate System|Coordinate
Zone|Vertical Datum|Horizontal Datum|HorizontalUnits|Resolution
X|Resolution Y|Quad Sequence Nbr| Cell ID|Odbprodid
```

Updated lists of DOQ and DRG from Lister Florence [lflore@usgs.gov](mailto:lflore@usgs.gov) contain:

```
STATUS_CODE, STATUS_DATE, AUTH_DATE, PUBLICATION_DATE,
ASSIGNMENT_ID, PRODUCT_ID, CELL_ID, MRC_CODE, EXTENT_SIZE_NAME,
CELL_NAME, STATE, COUNTRY, SOURCE_TYPE, SOURCE_DATE, ITEM_ID,
```

NORTH\_LATITUDE\_NMBR, SOUTH\_LATITUDE\_NMBR, EAST\_LONGITUDE\_NMBR,  
 WEST\_LONGITUDE\_NMBR, NORTH\_LATITUDE\_CHAR, SOUTH\_LATITUDE\_CHAR,  
 EAST\_LONGITUDE\_CHAR, WEST\_LONGITUDE\_CHAR

Labels and data elements from the USGS Topographic Map Names Data Base in  
[http://geonames.usgs.gov/gnis\\_users\\_guide\\_descripddb.html](http://geonames.usgs.gov/gnis_users_guide_descripddb.html) - USGSTMNDB

Label	Data Element
CNTYPCT	PERCENT COVERAGE BY COUNTY
COORD	LAT/LONG (SE CORNER) - QUAD SIZE (MINUTES)
COUNTY	COUNTY NAME
DATE	DATE OF NAME CHANGE
FIPS	STATE ALPHA FIPS CODE
HIST	FORMER QUADRANGLE NAME(S)
NAME	QUADRANGLE NAME
NUMBER	ID NUMBER
QUAD	USGS QUADRANGLE CODE
SCALE	QUADRANGLE SCALE
STATE	QUADRANGLE STATE(S)
XNAME	7.5 x 15 MINUTE MAP NAME
250	QUADRANTS 250000 SERIES

#### **D. Policies**

##### **1. Restrictions**

###### **a. Use Constraints**

None

###### **b. Access Constraints**

None

###### **c. Certification Issues**

None

##### **2. Maintenance**

###### **a. Temporal Information**

Photo date and production date for the DRG or DOQQ in each row

###### **b. Average Update Cycle**

Periodic. Primarily the photo and production date.

#### **E. Acquisition Cost**

##### **1. Cooperative Agreement**

###### **a. Description of Agreement**

None

###### **b. Status of Agreement**

None

## 2. Cost to Acquire Data

Nothing.

### III. Integration

#### A. *Value Added Process*

##### 1. Benefit to the Service Center

Provide a consistent database for map indexes.

##### 2. Process Model

###### a. Flow Diagram

###### b. Process Description

Use the fields from the database to generate a five-point polygon quadrangle boundary.

##### 3. Technical Issues

###### a. Tiling

None

###### b. Compression

None

###### c. Scale

Varies depending on scale of quadrangle index.

###### d. Tonal Matching

None – vector map

###### e. Edge-matching

None – vector map

##### 4. Quality Control

###### a. Procedures

Compare list of quadrangle names at the scale to another list

###### b. Acceptance Criteria

100% accuracy when names match sheet name in corner of paper map.

##### 5. Data Steward

###### a. Name and Organization

Currently, the data steward for the integrated data is:  
National Cartography and Geospatial Center  
Natural Resources Conservation Service  
US Department of Agriculture  
501 Felix Street, Building 23  
P. O. Box 6567  
Fort Worth, Texas 76115-0567 USA

b. Responsibilities

Storage, update and access of the data.

**B. Integrated Data Structure**

**1. Geospatial Data Format**

a. Format (raster, vector, etc.)

Vector

b. Format Name

The format name is ESRI ArcSDE

c. Data Extent

United States and its territories

d. Horizontal and Vertical Resolution

Absolute accuracy because the index maps are generated grids

e. Absolute Horizontal and Vertical Accuracy

Absolute accuracy because the index maps are generated grids

f. Nominal Scale

1:12000 for DOQQ to 1:250,000 for 1x2 degree quad index

g. Horizontal and Vertical Datum

The datum is North American Datum 1983 for all appropriate areas (UTM zone 3 through 22) and World Geodetic System 1984 elsewhere. The vertical datum is mean sea level.

h. Projection

Longitude/Latitude

i. Coordinate Units

Decimal degrees

j. Symbolology

<http://www.itc.nrcs.usda.gov/scdm/docs/SPG-StandardforGeospatialSymbolology.pdf>



## 2. Attribute Data Format

### a. Format Name

The attributes are part of the SDE layer.

### b. Database Size

Part of the SDE layer.

## 3. Data Model

### a. Geospatial Data Structure

ArcSDE DBMS tables

### b. Attribute Data Structure

ArcSDE DBMS tables

### c. Database Table Definition

ArcSDE DBMS tables

### d. Data Relationship Definition

ArcSDE DBMS tables

### e. Data Dictionary

The dictionary is the same as the source data

## **C. Resource Requirements**

### 1. Hardware and Software

This is unknown at this time.

### 2. Staffing

This is unknown at this time.

## **D. Integration Cost**

### 1. Hardware and Software

This is unknown at this time.

### 2. Staffing

This is unknown at this time.

## **IV. Delivery**

### **A. Specifications**

#### 1. Directory Structure

##### a. Folder Theme Data is Stored In

F:\Geodata  
  \map\_indexes

## 2. File Naming Convention

<http://www.its.nrcs.usda.gov/scdm/docs/SPG-GeospatialDataSetFileNamingStandard.pdf>

- a. List of Theme Files and The File Naming Convention

Poly Files	
map shp	shp file
map dbf	dbf file
map shx	shx file
map sbn	sbn file
map sbx	sbx file

## **B. User Information**

### 1. Accuracy Assessment

- a. Alignment with Other Theme Geospatial Data

This data set has absolute accuracy because it is generated grids. The DRG indexes should align perfectly with the DRG Topographic Images. DOQQs are produced with some overlap, so the boundaries will not align

- b. Content

Polygons (generally five-point) to enclose the quadrangle

### 2. Appropriate Uses of the Geospatial Data

- a. Display Scale

1:12,000 to 1:250,000 depending in the index

- b. Plot Scale

1:12,000 to 1:250,000 depending in the index

- c. Area Calculations

Must first be converted to a rectangular projection because the database is geographic.

- d. Decision Making

No particular use in decision making

## **C. Maintenance and Updating**

### 1. Recommendations and Guidelines

- a. Original data location and structure

The integrated database is at NCGC and the data is delivered to the Service Center.

- b. Update Cycle

Periodically, (perhaps once a year) update the photo data and production date fields. The quad names rarely change. The location never changes. Occasionally, a 1:25,000 7.5x15 minute DRG will be changed to two 7.5x7.5 minute 1:24,000 quadrangles.

c. Availability

Make the updates available as soon as the database is updated.

d. Change Control

This is to be determined.